

INFLATING WATERCRAFT **SUPPORT DEVICE**

Patent Application
of

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INFLATING WATERCRAFT SUPPORT DEVICE

The present application is a continuation and claims priority of pending provisional patent application Serial No. 60/440,520, filed on January 16, 2003, entitled "Inflating Watercraft Support Device".

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to support devices for watercraft and, more particularly, it relates to an inflating support device that supports a watercraft upon water, land, ice, and/or snow for mooring, docking, or towing the watercraft. The support device can also be used without a watercraft for rescues of injured persons and/or for transporting supplies and/or gear upon water, land, ice, and/or snow.

2. Description of the Prior Art

Boating is both a popular pastime and a vital commercial activity in much of the world today. A watercraft, including personal watercraft, is often a substantial investment for the owner and/or operator. Many times when a boat operator is in the water, he or she desires to temporarily dock the watercraft on shore or on the water. In the past, boat operators would secure their watercraft to buoys, fixed docks, anchors, ropes, rigid docking devices, etc. These conventional devices are typically permanently attached structures either in the water or on the land with limited portability, if any, or these devices are too heavy and cumbersome for the average boat operator to transport or install. Furthermore, when using these types of conventional devices, the watercraft will often remain within the water or directly contacting the ground thereby compromising the quality or integrity of the hull of the watercraft.

For instance, many shores do not have a fixed dock structure and possess obstacles and debris which could damage a watercraft when the watercraft is beached or docked. A boat operator must search and find a shore with little or no debris to dock his or her watercraft. If not, the hull of the watercraft could be damaged or breached by the

1 shore debris and cause damage to the watercraft, cause the watercraft to take on water,
2 and/or causing the watercraft to lose its buoyancy. If the watercraft sinks, a serious
3 condition exists in that loss of life and loss of property often occurs. Any damage to the
4 hull can be expensive to repair and can impact the appearance and/or operation of the
5 watercraft.

6 The support device of the present invention solves these problems and others by
7 being both portable and adaptable. The support device of the present invention can be
8 easily transported between intended uses. The support device of the present invention is
9 adaptable to all types of watercraft, all types of terrains, and all types of conditions, i.e.,
10 tides, wakes, etc.

11 The support device of the present invention is easy to maintain and inflate. Once
12 deployed, the present invention will keep the hull of the watercraft from contacting the
13 ground on shore when used as an on-shore docking device.

14 The primary aspect of the present invention is to provide a deployable support
15 device to keep the watercraft above the ground when docking or towing the watercraft on
16 a shore, to maintain a watercraft on the water for towing and docking, to provide a rescue
17 device for removing injured persons upon ice, water, and/or snow, and to provide a
18 supply vessel for moving supplies on the land, ice, water, and/or snow.

19 Another aspect of the present invention is to provide a support device that can be
20 stored on the watercraft or in a vehicle and easily inflated and deployed. The support
21 device can be deflated and stored without difficulty.

22 Another aspect of the present invention is to provide for a support device that can
23 be easily deflated and removed from under the watercraft after the watercraft has been
24 reentered the water or at any other desired time.

25 Another aspect of the present invention is to provide a support device that is easy
26 to manufacture, install, and move.

27

1 SUMMARY

2 The present invention is an inflatable watercraft support device for supporting a
3 watercraft on the land or on the water. The support device comprises a first support
4 bladder having a first end and a second end and a second support bladder having a first
5 end and a second end. A connecting mechanism connects the first end of the first support
6 bladder to the first end of the second support bladder.

7 In addition, the present invention includes an apparatus for docking and towing a
8 watercraft on land and water. The apparatus comprises a first bladder having a first end
9 and a second end and a second bladder having a first end and a second end. Connecting
10 means connect the first end of the first bladder to the first end of the second bladder.
11 Sheet material connects the first bladder and the second bladder wherein the first bladder
12 and the second bladder have a substantially V-shaped configuration.

13 The present invention further includes a method for docking and towing a
14 watercraft on land and water. The method comprises providing a first support bladder
15 and a second support bladder, connecting the first support bladder to the second support
16 bladder creating a support device, positioning the support device on the land or water, and
17 maneuvering the watercraft onto the support device.

18
19 BRIEF DESCRIPTION OF THE DRAWINGS

20 FIG. 1 is a perspective view illustrating an inflating watercraft support device,
21 constructed in accordance with the present invention, with the support device in an
22 inflated condition;

23 FIG. 2 is a top plan view illustrating the inflating watercraft support device of
24 FIG. 1, constructed in accordance with the present invention, with the support device in
25 the inflated condition;

26 FIG. 3 is a perspective view illustrating the inflating watercraft support device of
27 FIG. 1, constructed in accordance with the present invention, with the support device in a
28 deflated, rolled condition;

1 FIG. 4 is perspective view illustrating the inflating watercraft support device of
2 FIG. 1, constructed in accordance with the present invention, with a watercraft being
3 supported by the support device between the water and the land;

4 FIG. 5 is a perspective view illustrating another embodiment of the inflating
5 watercraft support device, constructed in accordance with the present invention, with the
6 support device being in an inflated condition;

7 FIG. 6 is a perspective view illustrating the inflating watercraft support device of
8 FIG. 5, constructed in accordance with the present invention, with the support device
9 being in a deflated, rolled condition;

10 FIG. 7 is a perspective view illustrating the inflating watercraft support device of
11 FIG. 5, constructed in accordance with the present invention, with a watercraft entering
12 upon the support device as the watercraft enters or leaves the water;

13 FIG. 8 is a perspective view illustrating the inflating watercraft support device of
14 FIG. 5, constructed in accordance with the present invention, with the watercraft being
15 supported by the support device between the water and the land;

16 FIG. 9 is another perspective view illustrating the inflating watercraft support
17 device of FIG. 5, constructed in accordance with the present invention, with the
18 watercraft being supported by the support device between the water and the land;

19 FIG. 10 is a top plan view illustrating still another embodiment of the inflating
20 watercraft support device, constructed in accordance with the present invention;

21 FIG. 11 is an elevational side view illustrating the inflating watercraft support
22 device of FIG. 10, constructed in accordance with the present invention;

23 FIG. 12 is a sectional view illustrating the inflating watercraft support device of
24 FIG. 10, constructed in accordance with the present invention;

25 FIG. 13 is a top plan view illustrating still yet another embodiment of the inflating
26 watercraft support device, constructed in accordance with the present invention;

27 FIG. 14 is an elevational side view illustrating the inflating watercraft support
28 device, constructed in accordance with the present invention, with a sand cleat for
29 inhibiting movement of the support device on a shore or beach; and

1 FIG. 15 is a perspective view illustrating a sand cleat pocket and an insertable
2 sand cleat, constructed in accordance with the present invention.

3
4 Before explaining the disclosed embodiment of the present invention in detail, it
5 is to be understood that the invention is not limited in its application to the details of the
6 particular arrangement shown, since the invention is capable of other embodiments.
7 Also, the terminology used herein is for the purpose of description and not of limitation.

8
9 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

10 In general, the present invention is an air bag for marine application. As
11 illustrated in FIGS. 1 – 15, the present invention is an inflating watercraft support device,
12 indicated generally at 10, for supporting a watercraft 12 on the land 14 (see FIGS. 4 and
13 9) adjacent the water 16 or directly upon the water 16. The support device 10 is compact
14 and storable, in an uninflated condition (see FIGS. 3 and 6). The support device 10 is
15 lightweight and easily movable even after the support device 10 has been inflated and can
16 be used for emergency situations, storage of watercraft, towing or transporting watercraft,
17 repair, support of damaged craft, or for protection of watercraft.

18 The support device 10 of the present invention is suited and designed for use on
19 any type of watercraft 12. The watercraft 12 can be any type of watercraft including, but
20 not limited to, pleasure boats, commercial ships, military ships, cruise ships, power boats,
21 row boats, canoes, life boats, rafts, pontoon boats, ski boats, jet skis, etc.

22 Furthermore, the support device 10 can be used for other uses besides supporting
23 a watercraft 12 upon the land or the water when no dock or other mooring facility or
24 structure is available. For instance, the support device 10 can be used to tow a watercraft
25 12 either on the land 14, water 16, ice, snow, etc. The support device 10 can also be used
26 to tow supplies, if desires. Also, the support device 10 is perfectly suited for use in
27 rescue operations on water 16 and ice. An injured person can be easily moved onto the
28 support device 10 from the water 16, the snow, or the ice with minimal compromising of

1 the injured person. In fact, a standard emergency rescue backboard can be easily received
2 and secured within the support device 10.

3 As illustrated in FIGS. 1 – 4, the support device 10 of the present invention
4 includes a first support bladder 20 having a first side edge 22, a second side edge 24, a
5 front edge 26, and a rear edge 28 and a second support bladder 30 having a first side edge
6 32, a second side edge 34, a front edge 36, and a rear edge 38. Preferably, the size and
7 shape of the first support bladder 20 and the second support bladder 30 are identical to
8 each other thereby maintaining the watercraft 12 in a substantially level position upon
9 inflation of the first support bladder 20 and the second support bladder 30. It is within the
10 scope of the present invention, however, to construct the first support bladder 20 and the
11 second support bladder 30 in different and various sizes and/or shapes depending on the
12 desires of the user.

13 The first support bladder 20 and the second support bladder 30 preferably include
14 a taper from the front edge 26, 36 to the rear edge 28, 38. The tapering of the first
15 support bladder 20 and the second support bladder 30 allows a watercraft 12 to more
16 easily dock or moor upon the support device 10 and then to launch again.

17 The first support bladder 20 and the second support bladder 30 are preferably
18 constructed from a substantially puncture-resistant material which is tough and durable
19 and have sufficient strength to support the watercraft 12 either on the water 16, on the
20 land 14, or between the water 16 and the land 14. It is within the scope of the present
21 invention in all embodiments described herein, however, to construct the first support
22 bladder 20 and the second support bladder 30 from other materials or to construct the first
23 support bladder 20 and the second support bladder 30 with an inflatable tube surrounded
24 by the puncture-resistant material. Single or multiple layers of material can be used and
25 are within the scope of the present invention.

26 Further, the first support bladder 20 and the second support bladder 30 can have
27 an inner inflatable bladder (not shown) and an outer puncture-resistant skin covering the
28 inflatable bladder. In fact, the first support bladder 20 and the second support bladder 30
29 can have multiple inner inflatable bladders covered by an outer puncture-resistant skin.

1 In addition, the first support bladder 20 and the second support bladder 30 of the
2 support device 10 can have a rough surface or a smooth surface or both. The texture of
3 the surface of the first support bladder 20 and the second support bladder 30 allows the
4 support device 10 to move easier on the land 14, water 16, ice, snow, etc., or to be more
5 resistant to moving, depending on the desires of the user.

6 The support device 10 further includes a first edge material 40 extending around
7 the perimeter of the first support bladder 20 and a second edge material 42 extending
8 around the perimeter of the second support bladder 30. The first edge material 40 and the
9 second edge material 42 are preferably formed with and/or secured to the first support
10 bladder 20 and the second support bladder 30, respectively, during manufacture of the
11 first support bladder 20 and the second support bladder 30, or by stitching, welding,
12 gluing, or other means.

13 The first edge material 40 and the second edge material 42 have a pair of ear
14 portions 44 formed along the first side edges 22, 32 of the first support bladder 20 and the
15 second support bladder 30, respectively. Each ear portion 44 includes an aperture 46
16 reinforced by a grommet or the like for receiving a tie line 48. A stake 50 can be secured
17 to each tie line 48 to anchor the support device 10 to the land 14.

18 In an alternative embodiment, the stake 50 can be replaced with another anchoring
19 system (not shown) including, but not limited to, a bag or other container tied or secured
20 to the apertures 46, the D-rings 64, or with straps to the support device 10. The bag can
21 be filled with rocks, dirt, etc., to anchor the support device 10 in a desired position. Once
22 the boat operator wishes to move the support device 10, the fill material can be removed
23 from the bag or the rope or strap can be disengaged.

24 In addition, the first edge material 40 and the second edge material 42 have a
25 plurality of aligned apertures or slots 52 spaced along the second side edges 24, 34 of the
26 first support bladder 20 and the second support bladder 30, respectively, for receiving a
27 strap 54. In the preferred embodiment, the support device 10 includes two adjusting
28 straps 54 with adjustable lengths. The adjustable straps 54 maintain the first support
29 bladder 20 and the second support bladder 30 at a desired various spacing from each other

1 with the front edge 26 of the first support bladder contacting the front edge 36 the second
2 support bladder 30 when the support device 10 is deployed and inflated.

3 The support device 10 of the present invention includes a swivel 56 between the
4 first support bladder 20 and the second support bladder formed in the first edge material
5 40 and the second edge material 42 adjacent the front edges 26, 36 to secure the first
6 support bladder 20 to the second support bladder 30. Preferably, the swivel comprises an
7 aperture reinforced by a grommet and a pin mechanism to maintain the first support
8 bladder 20 to the second support bladder 30.

9 As illustrated in FIG. 3, the adjusting strap 54 can be any type of strap which is
10 capable of adjusting the spacing between the first support bladder 20 and the second
11 support bladder 30. For instance, the adjustable strap 54 can include a buckle
12 mechanism, VELCRO, etc., which allows lengthening or reducing the distance between
13 the first support bladder 20 and the second support bladder 30. It should be noted,
14 however, that the strap could be non-adjusting and have only a fixed length, or even
15 replaced with one or more inflatable tubes or supports.

16 As illustrated in FIGS. 5 – 12, the support device 10 includes the first support
17 bladder 20 and the second support bladder 30 being joined together to form one support
18 bladder and sized and shaped for receiving a typical size personal watercraft and
19 supporting the entire personal watercraft on the land or water. It should be noted that,
20 however, the support device 10 can be any length or width.

21 As illustrated in FIG. 13, in addition to being connected by a swivel 56, the first
22 support bladder 20 and the second support bladder 30 can be joined together by welding
23 or stitching. Joining the first support bladder 20 and the second support bladder 30 by the
24 swivel 56 or by welding or stitching, provides a substantially V-shape and allowing the
25 width between the rear edges 28, 38 to be adjusted depending on the size of the watercraft
26 12 and/or the desires of the user.

27 Once again, the straps 54 are adjustable maintaining the proper and desired
28 spacing. Furthermore, as illustrated in FIGS. 10 and 13, the support device 10 can
29 include a permanent or removable floor 60 secured to the support bladder by stitching,

1 welding, or other means. Even with the floor 60, the proper and desired spacing can be
2 maintained by choosing the appropriate width floor 60.

3 In this embodiment of the present invention, only the rear edges 28, 38 of the first
4 support bladder 20 and the second support bladder 30 are tapered. Once again, the
5 tapering of the rear edges 28, 38 allows easier entry and removal of a personal ski
6 watercraft from the support device.

7 The first support bladder 20 and the second support bladder 30 of the support
8 device 10 of all embodiments of the present invention can be inflated with air or other
9 gases through known means including automatic and manual pumps. The gas can be
10 stored in a portable tank or permanent tank which are storable on the watercraft 12 or on
11 the land 14 are within the scope of the present invention.

12 As illustrated in FIGS. 3 and 6, the first support bladder 20 and the second support
13 bladder 30 of the support device 10 of the present invention are folded into a substantially
14 spiral configuration to fit within a smaller space. The first support bladder 20 and the
15 second support bladder 30 can be configured in a round spiral wound or a flat spiral
16 wound. Winding the first support bladder 20 and the second support bladder 30 in a flat
17 spiral wound allows the support device 10 to have a lower profile and fit within a smaller
18 container or space.

19 It should be noted that the first support bladder 20 and the second support bladder
20 30 has been described and illustrated herein as being wound in a substantially spiral
21 configuration. It is within the scope of the present invention, however, to store the first
22 support bladder 20 and the second support bladder 30 in any configuration including, but
23 not limited to, a substantially overlaying, serpentine manner or folded.

24 Handles 62 can be mounted on the support device 10 to allow for easier
25 maneuverability of the support device on the land 14, water 16, ice, snow, etc. D-rings 64
26 can also be provided to allow any watercraft 12 or gear upon the support device 12 to be
27 tied down with straps or the like, or a cover (not shown) to be secured. In addition, fill
28 valves 76 allow for easy inflation of the first support bladder 20 and the second support
29 bladder 30.

1 The operation of the support device 10 of the present invention will now be
2 described. It will be understood by those skilled in the art that the operation of the
3 support device 10 described herein is only one manner of operation and other manners of
4 operation are within the scope of the present invention.

5 As illustrated in FIGS. 1 – 13, as the watercraft 12 sits offshore, the user inflates
6 the support device 10 at a desired location such as with at least a portion of the support
7 device 10 resting in the water 16 and the remaining portion positioned on the land 14, the
8 entire support device resting on land 14, and or the support device 10 being upon the
9 water 16, ice, snow, etc. Preferably, the first support bladder 20 and the second support
10 bladder 30 are tapered to allow easy placement and removal of the watercraft 12 upon and
11 from the support device 10. The watercraft 12 can then be maneuvered upon the support
12 device 10 for safe and effective docking of the watercraft 12, storage of watercraft 12 on
13 land, water, or both, or for towing the watercraft 12.

14 As illustrated in FIGS. 11 and 13, the first support bladder 20 and the second
15 support bladder 30 can have a pitched nose 78. By pitching the nose 78 in a manner as
16 illustrated and described, the support device 10 better receives the watercraft 12 and
17 inhibits the watercraft 12 from traveling off the front of the support device 10. In
18 addition, the pitched nose 78 allows for easier towing of the watercraft 12 on the land and
19 on the water.

20 As illustrated in FIGS. 14 and 15, the support device 10 of the present invention
21 includes a sand cleat pocket 72 and a sand cleat 74 insertable into the sand cleat pocket
22 72. When inserted into the sand cleat pocket 72, the sand cleat 74 inhibits movement of
23 the support device 10 relative to the land when the user attempts to load the watercraft 12
24 onto the support device 10. The sand cleat 74 digs into the ground as the watercraft 12
25 begins and completes the loading process.

26 The support device 10 of the present invention provides a temporary docking
27 system for the watercraft, a tow vehicle for towing watercraft 12 on the land 14, water 16,
28 ice, snow, etc., and/or a rescue/transport device. The support device 10 is lightweight,
29 even after deployment, and can be easily deflated and stored upon the watercraft 12 after

1 the watercraft 12 has been has reentered the water 16. In fact, the support device 10 is
2 flexible, durable, portable, adaptable, lightweight, and compact.

3 The foregoing exemplary descriptions and the illustrative preferred embodiments
4 of the present invention have been explained in the drawings and described in detail, with
5 varying modifications and alternative embodiments being taught. While the invention
6 has been so shown, described and illustrated, it should be understood by those skilled in
7 the art that equivalent changes in form and detail may be made therein without departing
8 from the true spirit and scope of the invention, and that the scope of the present invention
9 is to be limited only to the claims except as precluded by the prior art. Moreover, the
10 invention as disclosed herein, may be suitably practiced in the absence of the specific
11 elements which are disclosed herein.

12